UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,832	12/02/2003	Paul Bernard Green	23742-013	2796

23628	7590	08/22/2006	EXAMINER

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	EXAMINER
	MARTINEZ, DAVID E

ART UNIT	PAPER NUMBER
2181	

DATE MAILED: 08/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>26 May 2006</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>22 April 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

FRITZ FLEMING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100
8/18/2006

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No.

6,449,671 to Patkar et al. (hereinafter Patkar).

1.   With regards to claim 1, Patkar teaches a data transfer apparatus [fig 2 element 40] for

controlling the provision of data to a data processor [fig 2 elements 12 or 14 or 16] where the

data comprises at least two data items [fig 2 data inside cache memory elements 42, 44, or 46,

column 4 lines 36-40] having a predetermined temporal relationship to one another, the data

items which are temporally associated with each other forming a group of data items [fig 2

elements 12,14,16 are buffers which hold data temporarily], the apparatus characterised by:

a first buffer [fig 2 element 42] for receiving data [fig 2 element 50] from sources of data

[column 3 line 34 to column 4 line 7] and including markers to indicate that a data item

associated with the marker has been modified [column 4 lines 35-52]; and

a data flow controller [fig 2 element 12] responsive to the markers and to a data

association instruction specifying the data items which have a temporal relationship to one

another and which form a group of data items such that the data flow controller only allows a

group of data items [fig 2 element 50] having a predetermined temporal relationship to be read

from the first buffer [fig 2 element 42] when the items in the group satisfy the predetermined

temporal relationship [column 4 lines 8-52].

2.   With regards to claim 2, Patkar teaches a data transfer apparatus as claimed in claim 1,

further comprising a second buffer [fig 2 element 44], and wherein a data item [fig 2 element 50]

is transferred [fig 2 element 52 'victim flush operation] from the first buffer [fig 2 element 42] to

the second buffer [fig 2 element 44] only when the data item satisfies any temporal constraints

associated with it [column 4 lines 8-52].

3.   With regards to claim 3, Patkar teaches a data transfer apparatus as claimed in claim 2,

in which the second buffer includes markers to indicate when a data item associated with the

marker is modified [column 4 lines 35-52 discloses data in a cache sets a dirty bit when data is

modified].

4.   With regards to claim 4, Patkar teaches a data transfer apparatus as claimed in claim 1,

in which the markers of the first buffer are set when an associated data item is written to the

buffer and cleared when the associated data item is read from the first buffer [column 4 lines 8-

52].

5.   With regards to claim 5, Patkar teaches a data transfer apparatus as claimed in claim 3,

in which the markers of the second buffer are set when an associated data item is written to the

second buffer and cleared when the associated data is read from the second buffer [column 4

lines 8-52].

6.   With regards to claim 6, Patkar teaches a data transfer apparatus as claimed in claim 1,

in which specific data items have predetermined place reserved within the first buffer [column 4

lines 8-52; cache element 42 is allocated to be used by processor 12, and the cache itself is

reserved for the data being used by processor 12].

7.   With regards to claim 7, Patkar teaches a data transfer apparatus as claimed in claim 2, in which specific data items have predetermined place within the second buffer [column 4 lines 8-52, data being transferred into cache element 44 is stored into allocated memory set aside for processor 12 to use].

8.   With regards to claim 8 Patkar teaches a data flow controller as claimed in claim 6, in which the data items which form a group have contiguous positions within the first buffer [fig 2 element 50 has the dirty bit associated with the rest of the data form the cache line (a group of data items) which are shown having contiguous positions in the buffer element, column 4 lines 8-52].

9.   With regards to claim 9, Patkar teaches a data transfer apparatus as claimed in claim 2 in which the transfer of a group of temporally related items from the first buffer to the second buffer is inhibited if only some of the corresponding items in the second buffer have been read by a sink process [column 4 lines 8-52, the transfer of cache line element 50 into buffer 44 is inhibited if processor 14 is unable to accept the data because of it's need to process the data (it's need for it's memory – sink process)].

10.   With regards to claim 10, Patkar teaches a data transfer apparatus as claimed in claim 2, in which the first buffer is N items deep and has N markers, the second buffer is M items deep and has M markers, and N equals M [fig 2 elements 42, 44 and 46 are cache memories that are partitioned into 5 "way" elements 48 each. Each way holds 3 cache lines, and each cache line has a dirty bit place].

11.   With regards to claim 11, it is of the same scope as claim 1 above and thus is rejected under the same rationale.

12.   With regards to claim 12, it is of the same scope as claim 2 above and thus is rejected under the same rationale.

13.   With regards to claim 13, it is of the same scope as claim 3 above and thus is rejected

under the same rationale.

14.   With regards to claim 14, it is of the same scope as claim 4 above and thus is rejected

under the same rationale.

Response to Arguments

Applicant's arguments filed 5/26/06 have been fully considered but they are not

persuasive.

With regards to Applicant's arguments directed to claim 1, the Examiner respectfully

disagrees.

As per Applicant's arguments on page 6 last paragraph and page 7 first and third

paragraphs, the scope of the argument directed to data items having a "temporal relationship" or

being "temporal related" does not commensurate with the scope of the claim. Applicant is

arguing a narrower limitation that what the claim calls for. As per the Merriam-Webster's

College Dictionary – 10th ed., the word "temporal" is defined as follows:

temporal: **1a**: of or relating to time as opposed to eternity **b**: of or relating to earthly life

c: lay or secular rather than clerical or sacred. **2**: of or relating to grammatical tense or

distinction of time. **3a**: of or relating to time as distinguished from space **b**: of or relating to the

sequence of time or to a particular time: chronological.

The data items in Patkar (data in cache and its corresponding "dirty bit" which form a

group of data items) are temporal since they are related to a particular time when the data has

been modified (a time period which happens to be "a same time period"). Their relationship is

also *temporary* since once the data is flushed, the dirty bit corresponding to that data is reset.

Furthermore, the data has a temporal relationship since it also has to do with the length of time

in which it is held in a buffer because it also relates to time. Also, it is noted that the marker associated with the data is the dirty bit itself.

As per the "data association instruction" that claim 1 calls for, when the group comprising of data and a dirty bit are moved, a data association instruction is being implemented so as to allow the group of data items to be read from a buffer.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "the data is not associated with a fixed cache/buffer memory location either in the primary or second level caches" (pg 7-second paragraph), and "the data association instruction is provided by the sensitivity register"(pg 7-third paragraph)) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim 11 is rejected under the same rationale used in the above analysis.

Claims 2-10 and 12-14 stand rejected due to their inherent deficiencies based from the dependency from claims 1 and 11 above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date

of this final action.

Any inquiry concerning this communication or earlier communications from the examiner

should be directed to David E. Martinez whose telephone number is (571) 272-4152. The

examiner can normally be reached on 8:30-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Fritz M. Fleming can be reached on 571-272-4145. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private

PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you

would like assistance from a USPTO Customer Service Representative or access to the

automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DEM

8/18/2006

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